

What is claimed is:

1. A process for predicting adverse responses to drugs effecting a target by assessing the responses of animal models, comprising:
 - 5 (a) providing a genetically engineered non-human mammal wherein said mammal exhibits either over-expression or under-expression of a target gene;
 - (b) subjecting said mammal to a pre-selected perturbation causing a desired physiologic stress in the mammal, and
 - (c) thereafter evaluating the responses of said genetically engineered mammal by
- 10 determining the metabonomic profile of the mammal.
2. The method of claim 1 wherein the genetically engineered non-human mammal is a rodent.
- 15 3. The method of claim 1 wherein the evaluating is accomplished by comparing the metabonomic profile of the genetically engineered mammal with the metabonomic profile of a substantially identical non-engineered mammal which has been subjected to the same pre-selected perturbation.
- 20 4. The method of claim 1 wherein the metabonomic profile is determined using urine.
5. The method of claim 1 wherein the metabonomic profile is determined using serum.
- 25 6. The method of claim 1 wherein the metabonomic profile is determined using plasma.
7. The method of claim 1 wherein the metabonomic profile is determined using milk.
- 30 8. A method of claim 1 wherein the pre-selected perturbation is a low dose of lipopolysaccharide.

9. A method of claim 1 wherein the pre-selected perturbation is exposure to flashing
strobe lights.

10. A method of claim 1 wherein the pre-selected perturbation is reversal of the light
5 dark cycle.

11. A method of claim 1 wherein the pre-selected perturbation is restraint.

12. A method of claim 1 wherein the pre-selected perturbation is oxidative stress.
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13. A method of claim 12 wherein the oxidative stress comprises feeding buthionine
sulfoximine.

14. A method of claim 1 wherein the pre-selected perturbation is viral infection.
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15. A method of claim 1 wherein the pre-selected perturbation is introduction of
genetic material which results in increased sensitivity to develop particular disorders.

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